



NASA Procedural Requirements

COMPLIANCE IS MANDATORY

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Electronic and Information Technology Accessibility

Responsible Office: Office of the Chief Information Officer

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Preface

P.1 Purpose

a. This document establishes procedural requirements for providing accessible Electronic and Information Technology (EIT) with special emphasis on implementation of Section 508 of the Rehabilitation Act of 1973, as amended. Section 508 requires Federal agencies' electronic and information technology be accessible to individuals with disabilities. This policy is meant to aid in the understanding of Section 508 and assign responsibility to key stakeholders in order to achieve and maintain compliance.

P.2 Applicability

- a. This NPR is applicable to NASA Headquarters and NASA Centers, including Component Facilities and employees. It applies to EIT acquired, developed, and maintained by or for NASA for use by NASA employees, employees of other Federal agencies, and the public on or after June 25, 2001.
- b. This document does not apply to EIT acquired, developed, or maintained by contractors solely to be used by contractors in developing products or services for NASA and which has not been procured under Government contract.
- c. For additional information regarding NASA Procurements, please refer to NASA Procurement Information Circular (PIC) 05-01.

P.3 Authority

- a. Sections 11101 and 11103, Information Technology Management (Clinger-Cohen Act of 1996 (CCA)), 40 U.S.C. § 11101, 11103.
- b. Section 501 of the Rehabilitation Act of 1973, Pub. L. 93-112, 29 U.S.C. § 791.
- c. Telecommunications for the Disabled Act of 1982, Pub. L. 97-410, 47 U.S.C. § 610.
- d. Hearing Aid Compatibility Act of 1988, Pub. L. 100-394, 47 U.S.C. § 610.
- e. Section 508 of the Rehabilitation Act of 1973, Pub. L. 105-220, 29 U.S.C. § 794(d).
- f. Assistive Technology Act of 1998, Pub. L. 105-394, 29 U.S.C. § 2201.
- g. Rehabilitation Act, 29 C.F.R. § 1614.203.
- h. OMB Circular A-11, Preparation, Submission, and Execution of the Budget.
- i. OMB Circular A-130, Management of Federal Information Resources.
- j. NPD 2800.1, Managing Information Technology.
- k. NASA Procurement Information Circular (PIC) 05-01, Electronic and Information Technology Accessibility.

P.4 Applicable Documents

- a. 36 CFR Part 1194, Electronic and Information Technology Accessibility Standards.
- b. FAR Subpart 39.2, Electronic and Information Technology.
- c. Federal Acquisition Circular (FAC) 97-27, Electronic and Information Technology Accessibility.
- d. NPR 2210.1, Release of NASA Software.

P.5 Measurement/Verification

This policy acts as a guide to NASA's internal implementation of Federal law. Compliance with this policy is verified by Agency and Center Section 508 Coordinators.

P.6 Cancellation

None.

/S/

Linda Cureton
Chief Information Officer

Chapter 1. Overview of Section 508 Accessible Electronic and Information Technology (EIT)

1.1 Background

1.1.1 In 1986, Congress added Section 508 to the Rehabilitation Act of 1973 thereby establishing guidance for Electronic and Information Technology (EIT) accessibility. In 1998, the Workforce Investment Act of 1998 was signed into law, which included the Rehabilitation Act Amendments of 1998. These amendments expanded information technology (IT) accessibility requirements and called on Federal agencies to implement the guidance.

1.1.2 Consistent with the Architectural and Transportation Barriers Compliance Board (the "Access Board"), EIT is defined as follows:

a. EIT includes IT and any equipment or interconnected system or subsystem of equipment that is used in the creation, conversion, or duplication of data or information. The term electronic and information technology includes, but is not limited to, telecommunications products (such as telephones), information kiosks and transaction machines, Web sites, multimedia, and office equipment such as copiers and fax machines. The term does not include equipment that contains embedded IT used as an integral part of the product, but the principal function of which is not the acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information. For example, HVAC (heating, ventilation, and air conditioning) equipment such as thermostats or temperature control devices, and medical equipment where information technology is integral to its operation, is not information technology.

1.2 Scope

1.2.1 The scope of this document includes both procurement of goods and services, as well as any EIT development by NASA or its contractors for the use of NASA employees, employees of other Federal agencies, and the public. This includes Government-developed/provided software (e.g., E-Government products, in-house development), Web-based content/applications, and other EIT that, even if not procured, are obtained from sources other than NASA and its contractors (e.g., if a university develops in conjunction with NASA, but at no cost to NASA, a Web-based survey requesting information from NASA civil servants, the survey shall comply with the requirements of this document).

1.2.2 The requirements identified in this document apply to EIT acquired, developed, maintained, and used by or for NASA for the use of NASA employees, employees of other Federal agencies, and the public. Additional information regarding Section 508 as it pertains to NASA can be found at <http://section508.nasa.gov>.

Chapter 2. Requirements

2.1. Procurement of EIT

2.1.1 In acquiring, developing, maintaining, and using EIT, NASA shall comply with the provisions of Section 508 of the Rehabilitation Act of 1973, as amended. These provisions state that individuals with disabilities, either Federal employees or members of the public, will have access to and use of information that is comparable to those without a disability. Software applications and operating systems, Web-based information, systems or applications (Internet, Intranet, or Extranet), telecommunications products, video and multimedia products, self-contained, closed products, and desktop and portable computers developed, procured, or maintained on or after June 25, 2001, must be Section 508 compliant.

2.1.2 Federal Acquisition Circular (FAC) 97-27, Electronic and Information Technology Accessibility, modified the Federal Acquisition Regulations (FAR) to describe requirements for the procurement of EIT that is consistent with Section 508. These requirements included conformance of procured supplies and services with the Access Board accessibility standards, among other stipulations. NASA PIC 05-01 provides guidance to NASA in implementing the FAR changes contained in FAC 97-27. PIC 05-01 applies to the procurement of both EIT supplies (such as computers, telephones, etc.) as well as services (e.g., development of a computer system for NASA use, publishing information on a NASA Web site). All NASA procurements shall adhere to the requirements of NASA PIC 05-01. Procurements made on or after June 25, 2001, are subject to compliance with Section 508. The standards are to be applied prospectively and do not require NASA to retrofit EIT implemented prior to June 25, 2001.

Maintenance and support for legacy systems, purchased or developed prior to June 2001, does not generally establish a requirement that the legacy system conform to the technical standards. If the maintenance is covered under a contract awarded prior to June 25, 2001, the procurement provisions of Section 508 might not be applicable. Patches to fix software errors on a system that is not near the end of its life expectancy, and system upgrades that could not operate with software that meets the applicable technical provisions of the Access Board's standards, would not require that the system become conformant. However, system owners should make every reasonable effort to address conformance with the technical standards. If a system is near the end of its life expectancy, the purpose of the 'maintenance' is to significantly upgrade and update the system, and the resources are available for such an upgrade, the relevant technical 508 standards apply.

2.1.3 It is the responsibility of the requiring office to ensure all products procured comply with Section 508 prior to deployment. Relying on vendor assurances alone is not sufficient. Requiring offices may perform conformance testing or may rely on analyses of Section 508 conformance performed by other NASA offices; guidance from the local Section 508 Coordinator; NASA contractors who did not develop the product or service; other Federal, state, or local agencies; independent testers such as universities, accessibility advocacy groups; and other parties not directly involved with the development/sale of the product or service who may be relied upon for a conformance determination.

2.2 Technical and Functional Criteria for Compliance with Section 508 of EIT Developed, Maintained, and Used by NASA

2.2.1 The development, maintenance, and use of all NASA EIT shall comply with the technical and

functional criteria (accessibility standards) set forth in the Section 508 Final Rule published by the Access Board in the Federal Register (36 CFR Part 1194, December 21, 2000) and effective as of June 25, 2001. The accessibility standards may be found at <http://www.access-board.gov/508.htm> and apply to EIT developed and maintained both by NASA civil servants and by NASA contractors for use by employees of NASA, employees of other Federal agencies, and/or the public.

2.3 Special Topics

2.3.1 Electronic Documents

2.3.1.1 Official communication shall be made accessible to persons with disabilities. Official communication refers specifically to communication by a Federal agency to employees that contains information necessary for those employees to perform their job functions, or communication by a Federal agency to members of the general public that contains information necessary for the conduct of official business with the agency. Examples of such electronic content may include e-mail messages, Word documents, .pdf documents, and other types and formats. If attempting to disseminate time-sensitive information that is not compliant with Section 508, a text-based disclaimer will be attached to all correspondence stating "For an accessible version of this material, please contact [NASA Civil Servant Document Owner], [Organization of Document Owner], [Phone]." Request for an accessible version will be expedited within twenty working days of the original appeal.

2.3.1.2 Broadcast e-mails and e-mails generated by Web applications will comply with the applicable Section 508 technical standards. Broadcast e-mails, as defined in this standard, are those e-mails sent:

- a. By a NASA civil servant, contractor, or appointee to any group or list comprised of persons, some of whom are not personally known to the sender, or
- b. As final documents intended for distribution to other Federal officials or to members of the public seeking information and services.

2.3.1.3 Electronic documents created and stored on individual workstations are not required to comply with Section 508 accessibility standards.

2.3.2 Laboratory Equipment

2.3.2.1 In the case of the procurement of laboratory equipment, any EIT that is included in the procurement as part of the laboratory equipment, regardless of whether the EIT is the end product of the procurement or the principal function of the laboratory equipment, shall conform to Section 508 requirements. EIT may be included in the procurement of the laboratory equipment either as embedded in the equipment or as a separate component. For example, full-featured oscilloscopes available in the marketplace today often include an embedded microprocessor that may run the Windows[®] operating system; be controlled by a touch screen, keyboard, and mouse; have Internet connectivity; and run a myriad of software applications, including e-mail. Such an oscilloscope is EIT and subject to Section 508, though not all of the Section 508 standards are applicable. Each type of laboratory equipment must be addressed individually and a determination made by the local Requiring Office (market research).

2.3.3 Complex Graphics

2.3.3.1 § 1194.22(a) of the Access Board Standards requires that, for Web-based intranet and internet information and applications, a text equivalent for every non-text element be provided. In the case of complex graphics embedded in Web pages or Web-posted documents, it may be difficult

or impossible to completely describe a graphic in text. In such a case, the text description shall provide a meaningful, high-level description of the information conveyed by the graphic and, if feasible, a point of contact who may provide additional information. In providing the high-level description associated with the graphic, the content developer must keep in mind the intended audience for the Web page or document. As an example, content targeted at the scientific community would require a very different description than that targeted at the general population.

2.3.4 Complex Equations

2.3.4.1 Complex equations included in Web pages and embedded in Web-posted documents pose challenges to accessibility similar to those of complex graphics since they often are formatted as graphics. While there are tools that may potentially increase the accessibility of complex equations (and also graphs), the Agency has not yet evaluated the practicality of using those tools as standard practice in the Agency. Until such a determination is made, complex equations, which are formatted as graphics and embedded in Web pages or Web-posted documents, shall adhere to the same requirements as those for complex graphics.

2.3.5 Broadcast Materials

2.3.5.1 Video and Multimedia Products are of particular importance with regard to all written, graphical, or broadcast video materials or products produced for NASA (to include training). 36 CFR Part 1194.41 outlines the requirements supporting services for products accommodating the communication needs of end users with disabilities. The originating office shall ensure all multimedia produced and disseminated by NASA complies with the applicable technical standards, including all formats -- live or recorded over the air broadcast, live or recorded Web multimedia (such as video podcasts, Webcasts, Flash, or other animation), and CD or DVD. Conformance with the standards for multimedia would include open or closed captioning of audio and an audio description of video.

2.4 Applicability and Exceptions

2.4.1 FAC 97-27 specifies situations in which compliance with Section 508 and the Technical Standards is not required. Further, FAR Part 39.204 defines situations in which compliance with Section 508 is not required if an exception exists. Neither the Section 508 statute nor regulations permit deviations to Section 508 requirements beyond the exceptions described below.

2.4.2 Exceptions to Section 508

2.4.2.1 EIT acquisitions, to include new procurements as well as software developed and/or maintained by NASA, are not required to meet the technical standards if the acquisition is:

- a. a national security system;
- b. EIT acquired by a contractor incidental to a contract (i.e., for use by its own employees and not for the Government or members of the public);
- c. EIT located in spaces frequented only by service personnel for maintenance, repair, or occasional monitoring of equipment; or
- d. Instances where compliance would impose an undue burden.

(1) Undue burden has been defined by the FAR in the context of procurements, but the same concept applies to EIT which is developed and maintained by NASA. FAR Subpart 39.2 defines undue burden as a significant difficulty or expense. FAR Subpart 39.204(e)(1)(ii) requires that in

determining undue burden, an agency must consider all resources available to the program or component for which the EIT is being acquired. Therefore, undue burden cannot be established by simply stating that a compliant solution "costs too much" or is more expensive than a noncompliant solution. If an undue burden exception is granted, the information and data specific to the EIT shall be provided to individuals with disabilities by an alternative means of access. The Center legal counsel must concur on any undue burden determination.

e. Location Specificity (1) When agencies provide public access to information through EIT, agencies are not required to make products owned by the agency available for access and use by individuals with disabilities at a location other than where the electronic and information technology is provided to the public, or to purchase products for access and use by individuals with disabilities at a location other than where the electronic and information technology is provided to the public. f. Commercial Non-availability

(1) When procuring a product, the Agency will procure products which comply with the provisions in Section 508 Technical Standards when such products are available in the commercial marketplace or developed in response to a Government solicitation. Agencies cannot claim a product as a whole is not commercially available because no product in the marketplace meets all the standards. If a commercially available product meets some but not all of the standards, the Agency must procure the product that best meets the standards.

g. Fundamental Alteration

(1) Applies to a change in the fundamental characteristic or purpose of the product or service, not merely a cosmetic or aesthetic change. For example, an agency intends to procure pocket-sized pagers for field agents for a law enforcement agency. Adding a large display to a small pager may fundamentally alter the device by significantly changing its size to such an extent that it no longer meets the purpose for which it was intended, that is to provide a communication device which fits in a shirt or jacket pocket.

2.4.2.2 Exceptions to the procurement of NASA EIT shall conform to the requirements of NASA PIC 05-01, which provides Agency guidance to ensure procurements are conducted in a way that meets the requirements of Section 508. To request an exception, the Program/Project Manager must complete steps identified in Section 2.5.

2.5 Applying for Exceptions to Section 508 Technical Standards

2.5.1 Exceptions to Section 508 policies, procedures, standards, or requirements shall be granted in accordance to each Center's implementation process for Section 508 enforcement.

2.6 The exception request shall include:

a. Details with regards to the portion of Section 508 applied to the exception to include the reason/justification and may incorporate:

- (1) Risk Assessment;
- (2) Cost-Benefit Analysis;
- (3) Business Impact Assessment;
- (4) Identification of compensating controls/actions;
- (5) Proposed period of time for the exception (if applicable);

(6) Voluntary Product Accessibility Template (VPAT);

(7) The proposed date by which the EIT will be compliant with Section 508 Technical Standards and/or Federal requirements; and

(8) Identification of compensating controls/actions (i.e., screen readers, sign language interpreters), if applicable.

Chapter 3. Roles and Responsibilities

3.1 Office of the Chief Information Officer (OCIO)

3.1.1 The NASA Chief Information Officer (CIO) shall:

- a. Be responsible for implementation of Section 508, including the establishment of Agency requirements documents and designation of a NASA Agency Section 508 Coordinator.
- b. Be responsible for the submission of reports and/or surveys related to Section 508 compliance.
- c. Ensure uniform technical standards are applied Agency wide.
- d. Review/approve all undue burden determinations.
- e. Maintain knowledge of Section 508 Technical Standards and accessible EIT solutions in their respective disciplines.

3.2 Agency Section 508 Coordinator

3.2.1 The Agency Section 508 Coordinator shall:

- a. Ensure compliance with this NPR.
- b. Provide guidance to the Center Section 508 Coordinators regarding implementation of the requirements and standards of Section 508.
- c. Establish and maintain policy regarding NASA's implementation and adherence to Section 508 standards.
- d. Provide guidance to Agency-level organizations regarding the resolution of Section 508 issues.
- e. Represent NASA as the Federal point of contact for Section 508.
- f. Coordinate Agency-wide EIT accessibility training.
- g. Perform training needs assessment of NASA personnel to determine topical areas for additional training.
- h. Develop or refine training plan in accordance with results of the needs assessment.
- i. Ensure information is available through the NASA Section 508 Web site thereby facilitating efficient communication of Section 508 issues within NASA.
- j. Chair the Section 508 Coordinator Working Group comprised of the Section 508 Coordinators, the designated members from each Center who have the authority to represent their respective Section 508 matters.
- k. Maintain knowledge of Section 508 Technical Standards and accessible EIT solutions in their respective disciplines.

3.3 Center Directors

3.3.1 The Center Directors shall:

- a. Ensure implementation of an effective Section 508 program at their Center.
- b. Maintain knowledge of Section 508 Technical Standards and accessible EIT solutions in their respective disciplines.

3.4 Officials-in-Charge of Headquarters Offices and Managers of NASA Center Directorates and Program/Project Managers

3.4.1 Officials-in-Charge of Headquarters Offices and Managers of NASA Center Directorates and Program/Project Managers shall:

- a. Ensure execution of this NPR within their respective organizations and/or programs/projects.
- b. Maintain knowledge of Section 508 Technical Standards and accessible EIT solutions in their respective disciplines.

3.5 Center Chief Information Officers

3.5.1 The Center CIOs shall:

- a. Ensure adherence to this NPR within stipulated timeframes through their interfaces with the NASA CIO, Center Section 508 Coordinators, and Program/Project Managers.
- b. Maintain knowledge of Section 508 Technical Standards and accessible EIT solutions in their respective disciplines.
- c. Designate a Center Section 508 Coordinator.

3.6 Center Section 508 Coordinators

3.6.1 The Center Section 508 Coordinators shall:

- a. Advise local Center staff on technical and policy matters regarding Section 508 and EIT.
- b. Develop/review Center Section 508 implementation plans, as required.
- c. Provide technical guidance to Center customers regarding Section 508 Technical Standards, implementation, and exceptions.
- d. Perform necessary actions in support of the Agency's compliance with Section 508 (i.e., participate in Section 508 working groups, training/workshop attendance, etc.).
- e. Provide guidance to the Office of Procurement at their local Center regarding procurement of EIT to ensure Section 508 compliance of new acquisitions.
- f. Perform annual audits on existing EIT to ensure compliance at their local Center.
- g. Assess and report on the state of Section 508 compliance across their local Center at the request of Center officials or the Agency Section 508 Coordinator.
- h. Maintain knowledge of Section 508 Technical Standards and accessible EIT solutions in their respective disciplines.

- i. Review and concur/non-concur, as needed, on exception requests as well as coordinate with requiring office/officials including, but not limited to, the Offices of Procurement and General Counsel.
- j. Maintain knowledge of any Section 508 exceptions of highly-specialized IT projects at respective Centers.

3.7 Office of the Chief Engineer

3.7.1 The Office of the Chief Engineer shall:

- a. Maintain knowledge of Section 508 Technical Standards and accessible EIT solutions in their respective disciplines.

3.8 Agency and Center Offices of Procurement

3.8.1 The Agency and Center Offices of Procurement shall:

- a. Ensure acquisitions procured on or after June 25, 2001, adhere to FAR Subpart 39.2.
- b. Ensure required Section 508 exception documentation is included in the contract file for any instance when NASA is unable to comply with Section 508.
- c. Prepare, process, and/or accept all EIT purchase requests in accordance with FAR 39.2.
- d. Review the Section 508 Technical Standards and provide concurrence/non-concurrence, as needed, on requiring activity's determination which Section 508 Accessibility Standards (36 CFR Part 1194) apply to the specific EIT product or service being procured.
- e. Accept market research, in accordance with FAR 10.001, to determine the commercial availability of products and services that meet the applicable technical provisions.
- f. Ensure Section 508 is addressed in any solicitation to procure EIT as specified in FAR Part 39-Acquisition of Information Technology, Subpart 39.2.
- g. Review exception requests, as needed, for Section 508 compliance and forward to the Agency Office of Procurement, for information.

3.9 Agency Office of Diversity and Equal Opportunity and Center Offices Responsible for Equal Opportunity Programs

3.9.1 The Agency Office of Diversity and Equal Opportunity (ODEO) and Center offices responsible for equal opportunity programs shall:

- a. Advise individuals with disabilities within NASA on policy matters regarding Section 508.
- b. Serve as the liaison between individuals with disabilities and those involved with the implementation of Section 508.
- c. Track NASA compliance with Section 508 requirements and technical standards as it relates to employment-related matters.
- d. Investigate complaints alleging a failure to comply with Section 508 and track complaints via the

internal ODEO complaint process.

- e. Develop policy and implementation plans regarding the Section 508 complaint process.
- f. Evaluate the effectiveness of the internal Section 508 complaint process.
- g. Maintain knowledge of Section 508 Technical Standards and accessible EIT solutions in their respective disciplines.

3.10 Agency Office of General Counsel and Center Offices of Chief Counsel

3.10.1 The Agency Office of General Counsel (OGC) and Center Offices of Chief Counsel shall:

- a. Review for concurrence any undue burden exceptions to ensure that they meet applicable Section 508 requirements.
- b. Maintain knowledge of Section 508 legal requirements and advise whether EIT solutions meet the legal requirements.

3.11 Requiring Office

3.11.1 The Requiring Office shall:

- a. Ensure that authors/developers are creating EIT solutions which conform to Section 508 Technical Standards and performing necessary actions in support of the Agency's compliance with Section 508, which actions include exercise of responsibilities specified in paragraphs 1.8.2 and A.1.10 of NPR 2210.1, Release of NASA Software.
- b. Maintain knowledge of Section 508 Technical Standards and accessible EIT solutions in their respective disciplines.
- c. Adhere to the requirements noted in PIC 05-01.

Appendix A: Definitions

A.1 Access Board -- The Access Board is an independent Federal agency devoted to accessibility for people with disabilities. Created in 1973 to ensure access to Federally funded facilities, the Board is now a leading source of information on accessible design. The Board develops and maintains design criteria for the built environment, transit vehicles, telecommunications equipment, and for electronic and information technology. It also provides technical assistance and training on these requirements and on accessible design and continues to enforce accessibility standards that cover Federally funded facilities.

A.2 Approval -- The acknowledgement by the responsible official that the program/project has met expectations and formulation requirements and is ready to proceed to implementation.

A.3 Assistive Technology -- Any item, piece of equipment, or system whether acquired commercially, modified, or customized that is commonly used to increase, maintain, or improve functional capabilities of individuals with disabilities. This may include screen readers, which allow persons who cannot see a visual display to either hear screen content or read the content in Braille.

A.4 Business Impact Assessment -- Identifies exposure to sudden loss of critical business functions and supporting resources. Involves assessing both financial and non-financial (i.e., customer service) costs during business disruption and business restoration periods.

A.5 Commercial Non-availability -- Refers to circumstances where no commercial items are available that meet the applicable Access Board's technical provisions (directly or through equivalent facilitation) in time to satisfy the Agency's delivery requirements. If products are available that meet some, but not all, applicable provisions, Agencies cannot claim a product as a whole is non-available just because it does not meet all of the applicable technical provisions.

A.6 Concurrence -- The individual(s) reviewing and providing agreement within their span of responsibility of a document, product, or service that has yet to be approved.

A.7 Contract -- A mutually binding legal relationship obligating the seller to furnish the supplies or services (including construction) and the buyer to pay for them. In addition to bilateral instruments, contracts include, but are not limited to: awards and notices of awards; job orders or task letters initiated under basic ordering agreements; letter contracts; orders, such as purchase orders, under which the contract becomes effective by written acceptance or performance; and bilateral contract modifications.

A.8 Customer -- Any individual, organization, or other entity to which a program or project provides a product(s) and/or service(s).

A.9 Electronic and Information Technology (EIT) -- Includes "Information Technology" and any equipment or interconnected system or subsystem of equipment that is used in the creation, conversion, or duplication of data or information. The term includes, but is not limited to, telecommunication products (such as telephones), information kiosks and transaction machines, World Wide Web sites, multimedia, and office equipment such as copiers and fax machines.

The term does not include any equipment that contains embedded Information Technology that is used as an integral part of the product, but the principal function of which is not the acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information. For example, HVAC (heating, ventilation, and air conditioning) equipment such as thermostats or temperature control devices, and medical equipment

where Information Technology is integral to its operation, are not Information Technology.

A.10 Equivalent Facilitation -- Agencies may accept EIT offered by vendors which uses designs or technologies that do not meet the applicable technical provisions in Subpart B of 36 CFR Part 1194.5, but provide substantially equivalent or greater access to and use of a product for people with disabilities. Equivalent facilitation is designed to allow the marketplace to offer innovative solutions.

A.11 Fundamental Alteration -- An exception that applies to a change in the fundamental characteristic or purpose of the product or service, not merely a cosmetic or aesthetic change. For example, an agency intends to procure pocket-sized pagers for field agents for a law enforcement agency. Adding a large display to a small pager may fundamentally alter the device by significantly changing its size to such an extent that it no longer meets the purpose for which it was intended, that is to provide a communication device which fits in a shirt or jacket pocket. For some of these agents, portability of electronic equipment is a paramount concern. Generally, adding access should not change the basic purpose or characteristics of a product in a fundamental way.

A.12 Highly Specialized Information Technology (IT) -- Highly Specialized IT is a part of, internal to, or embedded in a mission platform. The platform's function (e.g., avionics, guidance, navigation, flight controls, simulation, radar, etc.) is enabled by IT but not driven by IT itself (e.g., computer hardware and software to automate internal functions of a spacecraft or spacecraft support system such as spacecraft control and status, sensor signal and data processing, and operational tasking.) Highly Specialized IT acquisitions may include full development (where the information technology is a primary issue) to modification of existing systems (information architecture is firm and demonstrated in an operational environment) where IT is not an issue. Real time is often critical -- and few opportunities exist to use Commercial Off-The-Shelf (COTS) or Government Off-The-Shelf (GOTS) beyond microprocessors and operating systems because these systems are largely unprecedented or largely unique applications. Certain IT are considered mission critical because the loss of which would cause the stoppage of mission operations supporting real-time on-orbit mission operations is identified as "Highly Specialized" by the Directorate Associate Administrator. Highly Specialized IT is largely custom, as opposed to COTS or commodity IT systems or applications and includes coding/applications that are integral parts of the research or science requirements, e.g., Shuttle Avionics Upgrade. Common engineering IT tools such as Product Life-cycle Management (PLM) systems, Computer-Aided Design (CAD) systems, and collaborative engineering systems and environments are not Highly Specialized IT.

Representative examples of Highly Specialized IT include: Avionics software, real-time control systems, onboard processors, Deep Space Network, spacecraft instrumentation software, wind tunnel control system, human physiology monitoring systems, ground support environment, experiment simulators, Mission Control Center, and launch cameras.

A.13 Information Technology (IT) -- Information Technology (IT) means any equipment or interconnected system(s) or subsystem(s) of equipment that is used in the automatic acquisition, storage, analysis, evaluation, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information by the Agency.

A.14 Market Research -- A process used to collect, organize, maintain, analyze, and present data for the purpose of maximizing the capabilities, technology, and competitive force of the marketplace to meet an organization's needs for supplies or services.

A.15 Official Communication -- Supports the Agency's mission and is limited to those communications which contain information necessary for Federal employees to perform their job functions; or, when communicated to a member of the public, are necessary for them to conduct

official business with the Agency as defined by the Agency's mission.

A.16 Program -- A strategic investment by a Mission Directorate or Mission Support Office that has a defined architecture and/or technical approach, requirements, funding level, and a management structure that initiates and directs one or more projects. A program defines a strategic direction that the Agency has identified as critical.

A.17 Project -- A specific investment having defined requirements, a life-cycle cost, a beginning, and an end. A project yields new or revised products that directly address NASA's strategic needs.

A.18 Reasonable Accommodation -- Any modification or adjustment to a job or the work environment that will enable a qualified applicant or employee with a disability to participate in the application process or to perform essential job functions. Reasonable accommodation also includes adjustments to assure that a qualified individual with a disability has rights and privileges in employment equal to those of employees without disabilities.

A.19 Requiring Office -- The office from which a development project or procurement originates.

A.20 Undue Burden -- Significant difficulty or expense. In determining whether an action would result in an undue burden, the Agency considers the difficulty or expense of compliance, and all Agency resources available to its program or component for which the product or service is being developed, procured, maintained, or used.

Appendix B: Acronyms

CAD	Computer-Aided Design
CCA	Clinger-Cohen Act
CFR	Code of Federal Regulations
CIO	Chief Information Officer
COTS	Commercial Off-the-Shelf
EIT	Electronic and Information Technology
FAC	Federal Acquisition Circular
FAR	Federal Acquisition Regulations
FTP	File Transfer Protocol
GOTS	Government Off-the-Shelf
GSA	General Services Administration
HTTP	Hyper-Text Transfer Protocol
HVAC	Heating, Ventilation, and Air Conditioning
IT	Information Technology
OCIO	Office of the Chief Information Officer
ODEO	Office of Diversity and Equal Opportunity
OGC	Office of General Counsel
PIC	Procurement Information Circular
PLM	Product Life-Cycle Management
VPAT	Voluntary Product Accessibility Template